

Claim Amendments

Claim 1 (currently amended) A ~~means~~ device to heat ~~for heating~~ crude oil while being transferred through production tubing, flow lines, or field lines, ~~said~~ ~~means~~ the device comprising;
of production fluid pumped through or flowing through a heated section ~~or joint~~ of pipe, ~~that is heated~~ wherein said heated section comprises:
an inner hollow core situated inside an outer case, said outer case being
continuous and containing a heating apparatus;
and a suction rod housed in said inner hollow core, wherein said inner hollow
core is perforated to allow flow of crude oil between said inner hollow core and
said outer case and crude oil contacts said heating apparatus.

Claim 2 (currently amended) A heating apparatus ~~to be~~ located in ~~the~~ a production tubing, flow line, or field line at a point determined by evidence of previous paraffin or paraffin-like deposits;

the heating apparatus comprising;

an inner hollow core with a plurality of holes, an outer case encapsulating ~~the inner hollow core, heat source, and connecting electrical supply or steam~~
~~source, a~~ heating element apparatus contained within a chamber formed
between the outer case and the inner hollow core, the outer case having a threaded couplings on each end, compatible with the production tubing, flow line, or field line it is to be attached to; an electrical supply or steam source to the heat source;

wherein production fluid is pumped through or flows into inner core, and disperses through perforations into the chamber and contacting the heating element ~~heat source~~; whereby such apparatus heats the production fluid to a temperature sufficient to eliminate the solidification of paraffin.

Claim 3 (new) A device for heating crude oil as in Claim 1 wherein said heating apparatus utilizes electricity.

Claim 4 (new) A device for heating crude oil as in Claim 1 wherein said heating apparatus utilizes steam heat.

Claim 5 (new) A device for heating crude oil as in Claim 3 wherein said heated section comprises a plurality of heating elements wherein each element is wired individually.

Claim 6 (new) A device for heating crude oil as in Claim 3 wherein said outer case is insulated.

Claim 7 (new) A device for heating crude oil as in Claim 3 wherein said heated section further comprises a heated zone and a dry zone separated by washers.

Claim 8 (new) An in-line heating device, comprising:
an inner chamber to allow flow of oil, the inner chamber containing perforations;

an outer chamber housing the inner chamber; and
a heating element housed within the outer chamber;
wherein oil flowing through the inner chamber passes through the perforations to
the outer chamber where the oil directly contacts the heating element, and
heated oil passes again through the perforation back into the inner chamber.